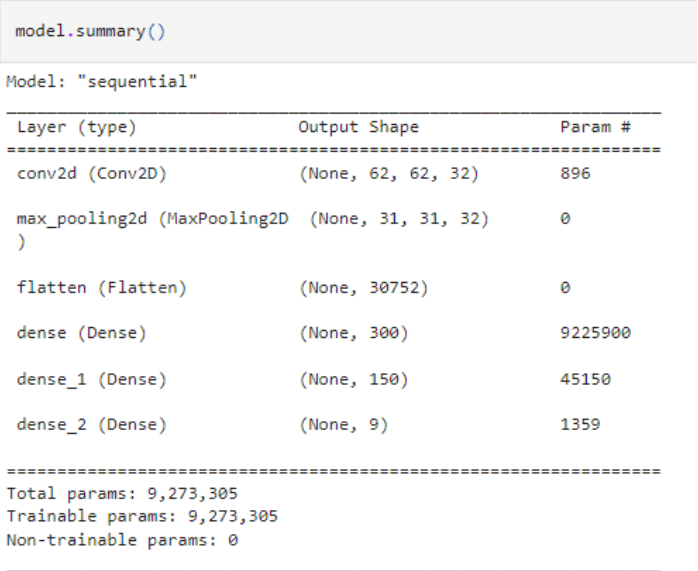


Project Development Phase Model Performance Test

Date	14 November 2022
Team ID	PNT2022TMID21808
Project Name	Real-Time Communication System powered by AI for Specially abled
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Values	Screenshot
1.	Model Summary	<pre> Model: "sequential" __ Layer (type) Output Shape Param # ===== conv2d (Conv2D) (None, 62, 62, 32) 896 max_pooling2d (None, 31, 31, 32) 0 flatten (Flatten) (None, 30752) 0 dense (Dense) (None, 300) 9225900 dense_1 (Dense) (None, 150) 45150 dense_2 (Dense) (None, 9) 1359 ===== Total params: 9,273,305 Trainable params: 9,273,305 Non-trainable params: 0 </pre>	 <pre> model.summary() Model: "sequential" __ Layer (type) Output Shape Param # ===== conv2d (Conv2D) (None, 62, 62, 32) 896 max_pooling2d (MaxPooling2D) (None, 31, 31, 32) 0 flatten (Flatten) (None, 30752) 0 dense (Dense) (None, 300) 9225900 dense_1 (Dense) (None, 150) 45150 dense_2 (Dense) (None, 9) 1359 ===== Total params: 9,273,305 Trainable params: 9,273,305 Non-trainable params: 0 </pre>

2.	Accuracy	<div>Training Accuracy - 0.9971</div> <div>Validation Accuracy - 0.9764</div> <div><pre>model.fit(x_train,epochs=12,validation_data=x_test,steps_per_epoch=len(x_train),validation_steps=len(x_test))</pre><div>Epoch 1/12 525/525 [=====] - 291s 553ms/step - loss: 0.2858 - accuracy: 0.9045 - val_loss: 0.2504 - val_accuracy: 0.9356 Epoch 2/12 525/525 [=====] - 129s 245ms/step - loss: 0.0642 - accuracy: 0.9799 - val_loss: 0.1858 - val_accuracy: 0.9769 Epoch 3/12 525/525 [=====] - 133s 254ms/step - loss: 0.0381 - accuracy: 0.9872 - val_loss: 0.1691 - val_accuracy: 0.9791 Epoch 4/12 525/525 [=====] - 130s 247ms/step - loss: 0.0296 - accuracy: 0.9907 - val_loss: 0.2054 - val_accuracy: 0.9778 Epoch 5/12 525/525 [=====] - 164s 312ms/step - loss: 0.0181 - accuracy: 0.9928 - val_loss: 0.1751 - val_accuracy: 0.9684 Epoch 6/12 525/525 [=====] - 164s 312ms/step - loss: 0.0239 - accuracy: 0.9922 - val_loss: 0.1724 - val_accuracy: 0.9827 Epoch 7/12 525/525 [=====] - 133s 253ms/step - loss: 0.0200 - accuracy: 0.9938 - val_loss: 0.1658 - val_accuracy: 0.9818 Epoch 8/12 525/525 [=====] - 128s 244ms/step - loss: 0.0136 - accuracy: 0.9957 - val_loss: 0.2241 - val_accuracy: 0.9760 Epoch 9/12 525/525 [=====] - 137s 262ms/step - loss: 0.0096 - accuracy: 0.9972 - val_loss: 0.2456 - val_accuracy: 0.9791 Epoch 10/12 525/525 [=====] - 253s 483ms/step - loss: 0.0121 - accuracy: 0.9963 - val_loss: 0.2512 - val_accuracy: 0.9769 Epoch 11/12 525/525 [=====] - 142s 271ms/step - loss: 0.0122 - accuracy: 0.9959 - val_loss: 0.2247 - val_accuracy: 0.9813 Epoch 12/12 525/525 [=====] - 127s 242ms/step - loss: 0.0084 - accuracy: 0.9971 - val_loss: 0.2049 - val_accuracy: 0.9764</div></div>
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Model Summary:

- Each layer has an output and its shape is shown in the “Output Shape” column.Each layer’s output becomes the input for the subsequent layer.
- The “Param #” column shows you the number of parameters that are trained foreach layer.
- The total number of parameters is shown at the end, which is equal to the number oftrainable and non-trainable parameters. In this model, all the layers are trainable.

Accuracy:

- "loss" refers to the loss value over the training data after each epoch. This is whatthe optimization process is trying to minimize with the training so, the lower, the better.
- "accuracy" refers to the ratio between correct predictions and the total number ofpredictions in the training data. The higher, the better. This is normally inversely correlatedwith the loss.