

Project Development Phase

Model Performance Test

Date	20th November 2023
Team ID	Team-591588
Project Name	ASL- Alphabet Image Recognition
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot
1.	Model Summary	<p>There is 1 Input Layer</p> <p>There are 13 Convolutional Layers</p> <p>There are 5 MaxPooling Layers</p> <p>ReLU and SoftMax activation functions have been used</p>	<pre> input_1 (InputLayer) [(None, 64, 64, 3)] 0 block1_conv1 (Conv2D) [(None, 64, 64, 64)] 1792 block1_conv2 (Conv2D) [(None, 64, 64, 64)] 36928 block1_pool (MaxPooling2D) [(None, 32, 32, 64)] 0 block2_conv1 (Conv2D) [(None, 32, 32, 128)] 73856 block2_conv2 (Conv2D) [(None, 32, 32, 128)] 147584 block2_pool (MaxPooling2D) [(None, 16, 16, 128)] 0 block3_conv1 (Conv2D) [(None, 16, 16, 256)] 295168 block3_conv2 (Conv2D) [(None, 16, 16, 256)] 590880 block3_conv3 (Conv2D) [(None, 16, 16, 256)] 590880 block3_pool (MaxPooling2D) [(None, 8, 8, 256)] 0 block4_conv1 (Conv2D) [(None, 8, 8, 512)] 1180160 block4_conv2 (Conv2D) [(None, 8, 8, 512)] 2359808 block4_conv3 (Conv2D) [(None, 8, 8, 512)] 2359808 block4_pool (MaxPooling2D) [(None, 4, 4, 512)] 0 block5_conv1 (Conv2D) [(None, 4, 4, 512)] 2359808 block5_conv2 (Conv2D) [(None, 4, 4, 512)] 2359808 block5_conv3 (Conv2D) [(None, 4, 4, 512)] 2359808 block5_pool (MaxPooling2D) [(None, 2, 2, 512)] 0 flatten (Flatten) [(None, 2048)] 0 dense (Dense) [(None, 512)] 1049088 dropout (Dropout) [(None, 512)] 0 dense_1 (Dense) [(None, 512)] 262656 dropout_1 (Dropout) [(None, 512)] 0 dense_2 (Dense) [(None, 29)] 14877 total params: 1604139 (61.19 MB) trainable params: 1326521 (5.06 MB) non-trainable params: 1471468 (56.13 MB) None </pre>
2.	Accuracy	<p>Training Accuracy - 86.86%</p> <p>Validation Accuracy - 87.68%</p>	<pre> Epoch 1/15: 100% 15s/step loss: 1.8986 accuracy: 0.3602 val_loss: 1.0514 val_accuracy: 0.6502 Epoch 2/15: 100% 15s/step loss: 1.1206 accuracy: 0.5786 val_loss: 0.8554 val_accuracy: 0.7448 Epoch 3/15: 100% 15s/step loss: 0.7193 accuracy: 0.7206 val_loss: 0.7108 val_accuracy: 0.8455 Epoch 4/15: 100% 15s/step loss: 0.4803 accuracy: 0.8480 val_loss: 0.5564 val_accuracy: 0.8812 Epoch 5/15: 100% 15s/step loss: 0.3664 accuracy: 0.9030 val_loss: 0.4530 val_accuracy: 0.9061 Epoch 6/15: 100% 15s/step loss: 0.3333 accuracy: 0.9303 val_loss: 0.3640 val_accuracy: 0.9333 Epoch 7/15: 100% 15s/step loss: 0.2996 accuracy: 0.9496 val_loss: 0.3102 val_accuracy: 0.9458 Epoch 8/15: 100% 15s/step loss: 0.2668 accuracy: 0.9702 val_loss: 0.3108 val_accuracy: 0.9451 Epoch 9/15: 100% 15s/step loss: 0.2451 accuracy: 0.9757 val_loss: 0.3106 val_accuracy: 0.9451 Epoch 10/15: 100% 15s/step loss: 0.2236 accuracy: 0.9806 val_loss: 0.3093 val_accuracy: 0.9451 Epoch 11/15: 100% 15s/step loss: 0.2021 accuracy: 0.9851 val_loss: 0.3082 val_accuracy: 0.9451 Epoch 12/15: 100% 15s/step loss: 0.1806 accuracy: 0.9896 val_loss: 0.3071 val_accuracy: 0.9451 Epoch 13/15: 100% 15s/step loss: 0.1591 accuracy: 0.9941 val_loss: 0.3061 val_accuracy: 0.9451 Epoch 14/15: 100% 15s/step loss: 0.1376 accuracy: 0.9986 val_loss: 0.3051 val_accuracy: 0.9451 Epoch 15/15: 100% 15s/step loss: 0.1161 accuracy: 0.9996 val_loss: 0.3041 val_accuracy: 0.9451 150/148 [====] 40s 161s/step loss: 0.4580 accuracy: 0.8676 Evaluate Test Accuracy: 86.76% </pre>