

## USER ACCEPTANCE

| S.No. | Parameter     | Values  | Screenshot   |
|-------|---------------|---|--|
| 1     | Model Summary |   | <pre>In [9]: x_test = test_datagen.flow_from_directory('/content/Dataset/test_set',target_size=(64,64),batch_size=300,class_mode='categorical',color_mode='grayscale')  Found 2250 images belonging to 9 classes.  In [9]: from keras.models import Sequential from keras.layers import Dense from keras.layers import Convolution2D from keras.layers import MaxPooling2D from keras.layers import Dropout from keras.layers import Flatten  In [9]: model = Sequential()  In [11]: model.add(Convolution2D(32,(3,3),input_shape=(64,64,1), activation='relu')) #no. of feature detectors, size of feature detector, image size, activation function  In [12]: model.add(MaxPooling2D(pool_size=(2,2)))  In [13]: model.add(Flatten())  In [14]: model.add(Dense(units=512, activation = 'relu'))  In [15]: model.add(Dense(units=9, activation = 'softmax'))  In [16]: model.compile(loss='categorical_crossentropy', optimizer = 'adam', metrics = ['accuracy'])</pre>  |
| 2     | Accuracy      | <p>Training Accuracy<br/>–99.6%</p> <p>Validation Accuracy<br/>–98.3%</p> | <pre>In [16]: model.compile(loss='categorical_crossentropy', optimizer = 'adam', metrics = ['accuracy'])  In [17]: model.fit_generator(x_train,steps_per_epoch=24,epochs=10,validation_data = x_test, validation_steps= 40) #steps_per_epoch = no. of train images/batch size  /usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:1: UserWarning: 'Model.fit_generator' is deprecated. Please use 'Model.fit', which supports generators. """Entry point for launching an IPython kernel.  Epoch 1/10 24/24 [=====] - ETA: 0s - loss: 1.0716 - accuracy: 0.7176 WARNING:tensorflow:Your input ran out of data; interrupting training. Make sure that your dataset or generator yields batches (in this case, 40 batches). You may need to use the repeat() function when building your 24/24 [=====] - 96s 4s/step - loss: 1.0716 - accuracy: 0.7176 - val_loss: 0.4701 Epoch 2/10 24/24 [=====] - 82s 3s/step - loss: 0.2010 - accuracy: 0.9400 Epoch 3/10 24/24 [=====] - 94s 4s/step - loss: 0.0867 - accuracy: 0.9751 Epoch 4/10 24/24 [=====] - 85s 4s/step - loss: 0.0403 - accuracy: 0.9893 Epoch 5/10 24/24 [=====] - 82s 3s/step - loss: 0.0289 - accuracy: 0.9915 Epoch 6/10 24/24 [=====] - 82s 3s/step - loss: 0.0209 - accuracy: 0.9949 Epoch 7/10 24/24 [=====] - 83s 3s/step - loss: 0.0137 - accuracy: 0.9957 Epoch 8/10 24/24 [=====] - 81s 3s/step - loss: 0.0090 - accuracy: 0.9979 Epoch 9/10 24/24 [=====] - 82s 3s/step - loss: 0.0153 - accuracy: 0.9957 Epoch 10/10 24/24 [=====] - 81s 3s/step - loss: 0.0086 - accuracy: 0.9986  Out[17]:  In [18]: model.save('aslpng1.h5')</pre> |