

Project Development Phase Model Performance Test

Date	10 November 2022
Team ID	PNT2022TMIDxxxxxx
Project Name	Project - xxx
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	<p>Model – Xception</p> <p>Xception is a convolutional neural network that is 71 layers deep. You can load a pretrained version of the network trained on more than a million images from the ImageNet database. The pretrained network can classify images into 1000 object categories. It belongs to the Convolutional Neural Networks (CNN).</p> <p>Architecture – Convolutional Neural Networks (CNN) with 71 layers pre-defined.</p> <p>Layers – Dropout (0.5), GlobalAveragePooling2D (), Flatten (), Dense (512, activation='relu'), BatchNormalization () and Dense (4, activation='softmax')</p> <p>Hyperparameters – Epoch (50+30),</p>	<pre>from tensorflow.keras.preprocessing.image import ImageDataGenerator as IDG IMG_SIZE=180 IMAGE_SIZE=[180, 180] DIM=(IMG_SIZE, IMG_SIZE) ZOOM=[.99, 1.01] BRIGHT_RANGE=[0.8, 1.2] HORZ_FLIP=True FILL_MODE="constant" DATA_FORMAT="channels_last" WORK_DIR="C://Users//Chetan 696//Desktop//Alzheimers//Combined Dataset//train" from keras.applications import Xception IMAGE_SIZE = [180, 180] input_shape = IMAGE_SIZE + [3] xception_model = Xception(input_shape=input_shape, include_top=False, weights='imagenet') for layer in xception_model.layers: layer.trainable = False from tensorflow.keras.models import Sequential from tensorflow.keras.layers import SeparableConv2D, BatchNormalization, GlobalAveragePooling2D custom_inception_model = Sequential([xception_model, Dropout(0.5), GlobalAveragePooling2D(), Flatten(), Dense(512, activation='relu'), BatchNormalization(), Dropout(0.5), Dense(256, activation='relu'), BatchNormalization(), Dropout(0.5), Dense(128, activation='relu'), BatchNormalization(), Dropout(0.5), Dense(64, activation='relu'), BatchNormalization(), Dense(4, activation='softmax')], name="inception_cnn_model") import tensorflow as tf METRICS = [tf.keras.metrics.CategoricalAccuracy(name='acc'), tf.keras.metrics.AUC(name='auc')] custom_inception_model.compile(optimizer='rmsprop', loss=tf.losses.CategoricalCrossentropy(), metrics=METRICS)</pre>

2.	Accuracy	Training Accuracy - Validation Accuracy -	<div><div>auc: 0.9917</div><div>Training Accuracy</div><div>val_auc: 0.9962</div><div>Validation Accuracy</div></div> <div>Epoch 30/30 130/130 [=====] - 139s 1s/step - loss: 0.1927 - acc: 0.9286 - auc: 0.9917 - val_loss: 0.1379 - val_acc: 0.9452 - val_auc: 0.9962</div>
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