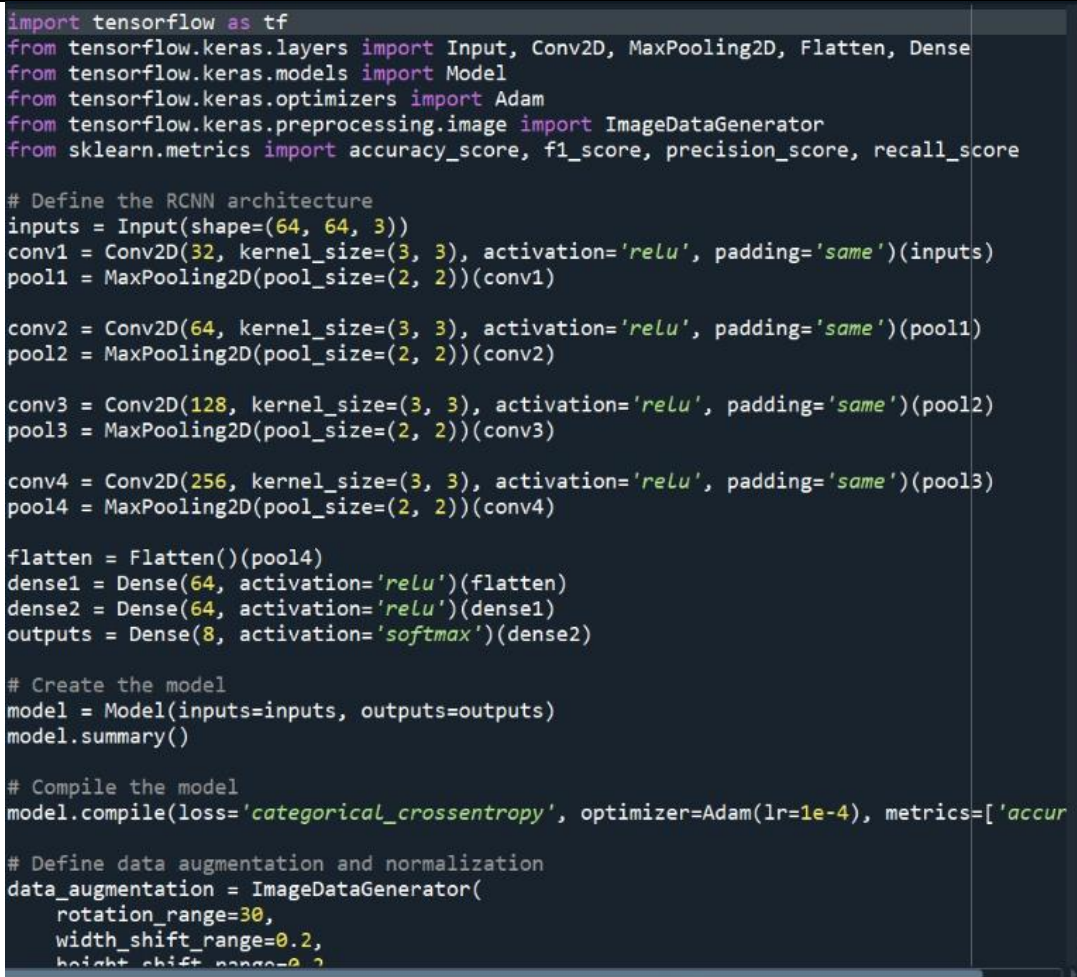


Project Development Phase Model Performance Test

Date	9 November 2023
Team ID	Team-593089
Project Name	Deep Learning Model for Detecting Diseases in Tea Leaves
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	Accuracy – 95.47% Precision – 95.86% Recall – 95.47% F1 score – 95.36% R2 score – 90.14%	 <pre> import tensorflow as tf from tensorflow.keras.layers import Input, Conv2D, MaxPooling2D, Flatten, Dense from tensorflow.keras.models import Model from tensorflow.keras.optimizers import Adam from tensorflow.keras.preprocessing.image import ImageDataGenerator from sklearn.metrics import accuracy_score, f1_score, precision_score, recall_score # Define the RCNN architecture inputs = Input(shape=(64, 64, 3)) conv1 = Conv2D(32, kernel_size=(3, 3), activation='relu', padding='same')(inputs) pool1 = MaxPooling2D(pool_size=(2, 2))(conv1) conv2 = Conv2D(64, kernel_size=(3, 3), activation='relu', padding='same')(pool1) pool2 = MaxPooling2D(pool_size=(2, 2))(conv2) conv3 = Conv2D(128, kernel_size=(3, 3), activation='relu', padding='same')(pool2) pool3 = MaxPooling2D(pool_size=(2, 2))(conv3) conv4 = Conv2D(256, kernel_size=(3, 3), activation='relu', padding='same')(pool3) pool4 = MaxPooling2D(pool_size=(2, 2))(conv4) flatten = Flatten()(pool4) dense1 = Dense(64, activation='relu')(flatten) dense2 = Dense(64, activation='relu')(dense1) outputs = Dense(8, activation='softmax')(dense2) # Create the model model = Model(inputs=inputs, outputs=outputs) model.summary() # Compile the model model.compile(loss='categorical_crossentropy', optimizer=Adam(lr=1e-4), metrics=['accur # Define data augmentation and normalization data_augmentation = ImageDataGenerator(rotation_range=30, width_shift_range=0.2, height_shift_range=0.2 </pre>

2.	Accuracy	Training Accuracy - 97.62 Validation Accuracy - 95.45
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Source Console Object

Usage

Help Variable Explorer Plots Files

Console 1/A X

Epoch 5/10
1641/1641 [=====] - 564s 344ms/step - loss: 0.0952 - accuracy: 0.9711 - val_loss: 0.0972 - val_accuracy: 0.9701
Epoch 6/10
1641/1641 [=====] - 610s 372ms/step - loss: 0.0884 - accuracy: 0.9729 - val_loss: 0.0870 - val_accuracy: 0.9741
Epoch 7/10
1641/1641 [=====] - 702s 428ms/step - loss: 0.0931 - accuracy: 0.9716 - val_loss: 0.1031 - val_accuracy: 0.9671
Epoch 8/10
1641/1641 [=====] - 699s 426ms/step - loss: 0.0869 - accuracy: 0.9738 - val_loss: 0.1091 - val_accuracy: 0.9671
Epoch 9/10
1641/1641 [=====] - 701s 427ms/step - loss: 0.0855 - accuracy: 0.9745 - val_loss: 0.0867 - val_accuracy: 0.9728
Epoch 10/10
1641/1641 [=====] - 690s 420ms/step - loss: 0.0803 - accuracy: 0.9762 - val_loss: 0.1546 - val_accuracy: 0.9545
704/704 [=====] - 213s 302ms/step
Model accuracy: 0.9547111111111111
Model precision: 0.9586115127471097
Model recall: 0.9547111111111111
Model f1 score: 0.9536339655749378
Model r2 score: 0.9014666666666666