Model Development Phase Template

Date	15 April 2024
Team ID	Team-738205
Project Title	Dog Breed Identification Using Transfer Learning
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

Paste the screenshot of the model training code.

- Initializing the model

```
Image_size=(224, 224, 3)
```

```
sol=VGG19(input_shape=Image_size, weights='imagenet', include_top=False)
```

Model Validation and Evaluation Report (5 marks):

New table

Model	Summary	Training and Validation Performance Metrics
Model 1	vgg.summary() Model: "model" Layer (type) Output Shape Param # input_1 (InputLayer) [(None, 224, 224, 3)] 0 block1_conv1 (Conv2D) (None, 224, 224, 64) 1792 block1_conv2 (Conv2D) (None, 224, 224, 64) 36928 block1_pool (MaxPooling2D) (None, 112, 112, 64) 0 block2_conv1 (Conv2D) (None, 112, 112, 128) 73856 block2_conv2 (Conv2D) (None, 112, 112, 128) 147584 block2_pool (MaxPooling2D) (None, 56, 56, 128) 0 block3_conv1 (Conv2D) (None, 56, 56, 256) 295168 block3_conv2 (Conv2D) (None, 56, 56, 256) 590080 block3_conv3 (Conv2D) (None, 56, 56, 256) 590080 block3_conv4 (Conv2D) (None, 56, 56, 256) 590080 block3_pool (MaxPooling2D) (None, 28, 28, 256) 0 block4_conv1 (Conv2D) (None, 28, 28, 512) 1180160 block4_conv2 (Conv2D) (None, 28, 28, 512) 2359808 block4_conv3 (Conv2D) (None, 28, 28, 512) 2359808 block4_conv4 (Conv2D) (None, 28, 28, 512) 2359808 block4_pool (MaxPooling2D) (None, 14, 14, 512) 0 block5_conv1 (Conv2D) (None, 14, 14, 512) 2359808 block5_conv2 (Conv2D) (None, 14, 14, 512) 2359808 block5_conv3 (Conv2D) (None, 14, 14, 512) 2359808 block5_conv4 (Conv2D) (None, 14, 14, 512) 2359808 block5_pool (MaxPooling2D) (None, 7, 7, 512) 0 flatten (Flatten) (None, 25088) 0 dense (Dense) (None, 120) 3010680 Total params: 23035064 (87.87 MB) Trainable params: 3010680 (11.48 MB) Non-trainable params: 20024384 (76.39 MB)	vgg.fit(generator, epochs=6, batch_size=32) Epoch 1/6 320/320 [==========] - 59s 155ms/step - loss: 290.0047 - Accuracy: 0.0287 Epoch 2/6 320/320 [==========] - 48s 150ms/step - loss: 140.9135 - Accuracy: 0.2859 Epoch 3/6 320/320 [==========] - 51s 160ms/step - loss: 33.7020 - Accuracy: 0.7185 Epoch 4/6 320/320 [==========] - 52s 161ms/step - loss: 9.9315 - Accuracy: 0.8889 Epoch 5/6 320/320 [==========] - 52s 161ms/step - loss: 2.7059 - Accuracy: 0.9580 320/320 [==========] - 52s 162ms/step - loss: 1.0849 - Accuracy: 0.9834 <keras.src.callbacks.History at 0x789c9af75d50>