

day-2-1

June 25, 2024

[]:

```
[1]: import tensorflow as tf
      from tensorflow import keras
      from tensorflow.keras import layers
      from tensorflow.keras.preprocessing.image import ImageDataGenerator

      IMG_SIZE = 244
      BATCH_SIZE = 32
```

```
[2]: train_datagen = ImageDataGenerator(rescale=1./255,validation_split=0.2)
      train_generator = train_datagen.flow_from_directory(
          '/content/drive/MyDrive/skin cancer',
          target_size=(IMG_SIZE,IMG_SIZE),
          batch_size=BATCH_SIZE,
          class_mode='categorical',
          subset='training'
      )

      val_generator = train_datagen.flow_from_directory(
          '/content/drive/MyDrive/skin cancer',
          target_size=(IMG_SIZE,IMG_SIZE),
          batch_size=BATCH_SIZE,
          class_mode='categorical',
          subset='validation'
      )
```

Found 231 images belonging to 1 classes.

Found 57 images belonging to 1 classes.

```
[3]: # Define the model
      model = keras.Sequential([
          layers.Conv2D(32,
              ↪(3,3),activation='relu',input_shape=(IMG_SIZE,IMG_SIZE,3)),
          layers.MaxPooling2D(2,2),
          layers.Conv2D(64,(3,3),activation='relu'),
          layers.MaxPooling2D(2,2),
```

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layers.Conv2D(128,(3,3),activation='relu'),
layers.MaxPooling2D(2,2),
layers.Flatten(),
layers.Dense(128,activation='relu'),
layers.Dense(6,activation='sigmoid') #output layer
])

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[4]: #compile the model
model.compile(optimizer='adam',loss='binary_crossentropy',metrics=['accuracy'])

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[5]: model.fit(train_generator,validation_data=val_generator,epochs=5)

```

```

Epoch 1/5
8/8 [=====] - 54s 7s/step - loss: 0.0957 - accuracy:
0.0000e+00 - val_loss: 9.1694e-21 - val_accuracy: 0.0000e+00
Epoch 2/5
8/8 [=====] - 35s 4s/step - loss: 1.9190e-20 -
accuracy: 0.0000e+00 - val_loss: 0.0000e+00 - val_accuracy: 0.0000e+00
Epoch 3/5
8/8 [=====] - 37s 4s/step - loss: 7.2434e-35 -
accuracy: 0.0000e+00 - val_loss: 0.0000e+00 - val_accuracy: 0.0000e+00
Epoch 4/5
8/8 [=====] - 34s 4s/step - loss: 0.0000e+00 -
accuracy: 0.0000e+00 - val_loss: 0.0000e+00 - val_accuracy: 0.0000e+00
Epoch 5/5
8/8 [=====] - 37s 5s/step - loss: 0.0000e+00 -
accuracy: 0.0000e+00 - val_loss: 0.0000e+00 - val_accuracy: 0.0000e+00

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[5]: <keras.src.callbacks.History at 0x7aa3ac3de620>

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[6]: model.save("model.h5","label.txt")

```

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/usr/local/lib/python3.10/dist-packages/keras/src/engine/training.py:3103:
UserWarning: You are saving your model as an HDF5 file via `model.save()`. This
file format is considered legacy. We recommend using instead the native Keras
format, e.g. `model.save('my_model.keras')`.
  saving_api.save_model(

```

```

[10]: from tensorflow.keras.models import load_model
from tensorflow.keras.preprocessing import image
import numpy as np

model = load_model('model.h5')
test_image_path = '/content/drive/MyDrive/skin cancer/Skin_Data/Cancer/Training/
↳1010-01.JPG'
# Change target size to (244, 244) to match the model's input shape
img = image.load_img(test_image_path, target_size=(244, 244))

```

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img_array = image.img_to_array(img)
img_array = np.expand_dims(img_array, axis=0)

img_array = img_array / 255.0

predictions = model.predict(img_array)
print(predictions)

```

```

1/1 [=====] - 0s 182ms/step
[[1. 1. 1. 1. 1. 1.]]

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[13]: from tensorflow.keras.models import load_model
      from tensorflow.keras.preprocessing import image
      import numpy as np

      model = load_model('model.h5')
      test_image_path = '/content/drive/MyDrive/skin cancer/Skin_Data/Cancer/Training/
      ↪1010-01.JPG'
      # Change target size to (244, 244) to match the model's input shape
      img = image.load_img(test_image_path, target_size=(244, 244))
      img_array = image.img_to_array(img)
      img_array = np.expand_dims(img_array, axis=0)

      img_array = img_array / 255.0

      predictions = model.predict(img_array)

      if predictions[0][0] < 0.5:
          print('It has skin cancer')
      else:
          print('It doesn\'t')

```

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1/1 [=====] - 0s 142ms/step
It doesn't

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