```
import numpy as np
from tensorflow import keras
from tensorflow.keras.models import load_model
from tensorflow.keras.utils import load_img,img_to_array
from tensorflow.keras.preprocessing import image
from tensorflow.keras.optimizers import SGD
from tensorflow.keras.preprocessing.image import ImageDataGenerator
import matplotlib.pyplot as plt
from keras.models import Sequential
from keras.utils import np_utils
from keras.layers import Dense,Activation,Dropout,LSTM,BatchNormalization
from keras.layers import Flatten
from tensorflow.keras.optimizers import RMSprop
from tensorflow.keras.utils import to_categorical
from keras.layers.convolutional import Conv2D
from keras.layers.convolutional import MaxPooling2D


trainset='/content/drive/MyDrive/Anh AI/train'
validationset='/content/drive/MyDrive/Anh AI/validation'
train=ImageDataGenerator(rescale=1/255.0)
validation=ImageDataGenerator(rescale=1/255.0,validation_split=0.99)


train_data=train.flow_from_directory(trainset,target_size=(150,150),batch_size=10,class_mode=
validation_set=validation.flow_from_directory(validationset,target_size=(150,150),batch_size=
```

```
Found 61 images belonging to 2 classes.
Found 26 images belonging to 2 classes.
```

```
print(train_data.class_indices)
print(validation_set.class_indices)
```

```
{'no': 0, 'yes': 1}
{'no': 0, 'yes': 1}
```

```
model·=·Sequential()
model.add(Flatten(input_shape=(150,150,3)))
model.add(Dense(784,activation='relu'))
model.add(Dense(512,activation='relu'))
model.add(Dense(2,activation='Softmax'))
model.summary()
```

```
Model: "sequential"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 flatten (Flatten)           (None, 67500)             0

 dense (Dense)               (None, 784)               52920784
```

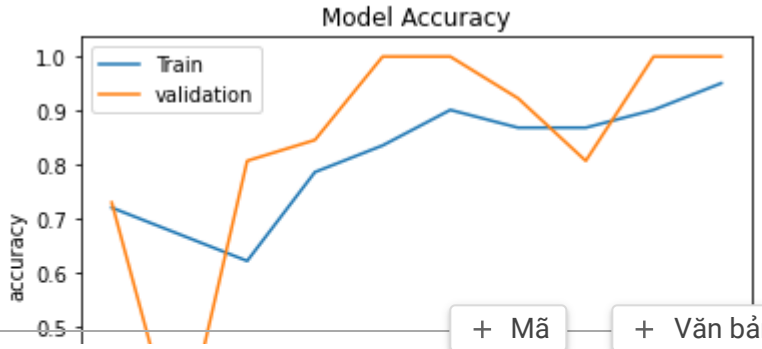
```
 dense_1 (Dense)             (None, 512)               401920

 dense_2 (Dense)             (None, 2)                 1026

=================================================================
Total params: 53,323,730
Trainable params: 53,323,730
Non-trainable params: 0
_________________________________________________________________
```

```
model.compile(loss='categorical_crossentropy',optimizer='Adam',metrics=['accuracy'])
```

```
history=model.fit(train_data,baatch_size=10,epochs=10,verbose=1,validation_data=validation_se
```

```
Epoch 1/10
7/7 [==============================] - 55s 8s/step - loss: 39.7527 - accuracy: 0.7213 -
Epoch 2/10
7/7 [==============================] - 18s 3s/step - loss: 20.1704 - accuracy: 0.6721 -
Epoch 3/10
7/7 [==============================] - 18s 3s/step - loss: 7.0005 - accuracy: 0.6230 - v
Epoch 4/10
7/7 [==============================] - 19s 3s/step - loss: 6.4690 - accuracy: 0.7869 - v
Epoch 5/10
7/7 [==============================] - 18s 3s/step - loss: 3.2632 - accuracy: 0.8361 - v
Epoch 6/10
7/7 [==============================] - 18s 3s/step - loss: 0.6660 - accuracy: 0.9016 - v
Epoch 7/10
7/7 [==============================] - 22s 3s/step - loss: 1.7644 - accuracy: 0.8689 - v
Epoch 8/10
7/7 [==============================] - 18s 3s/step - loss: 2.4663 - accuracy: 0.8689 - v
Epoch 9/10
7/7 [==============================] - 19s 3s/step - loss: 1.1380 - accuracy: 0.9016 - v
Epoch 10/10
7/7 [==============================] - 19s 3s/step - loss: 0.3880 - accuracy: 0.9508 - v
```

```
plt.plot(history.history['accuracy'])
plt.plot(history.history['val_accuracy'])
plt.title('Model·Accuracy')
plt.ylabel('accuracy')
plt.xlabel('epoch')
plt.legend(['Train','validation'],loc='upper·left')
plt.show()
```

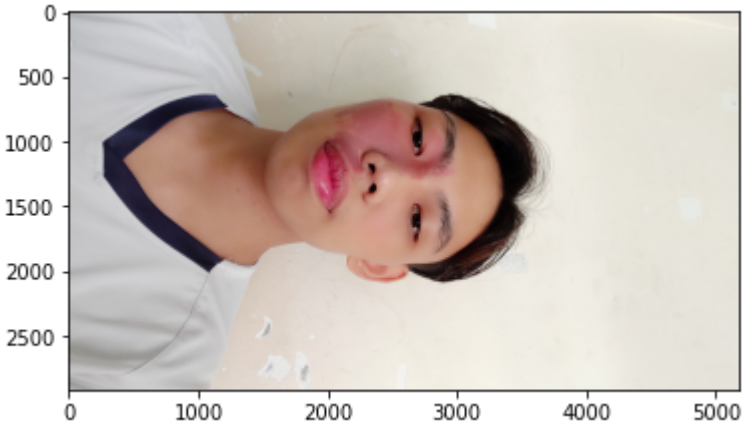


+ Mã + Văn bản

```
model.save('/content/drive/MyDrive/BT AI/FaceID.h5')
```

```
url='/content/drive/MyDrive/Anh AI/train/yes/IMG_20220508_163408.jpg'
plt.imshow(load_img(url))
```

```
<matplotlib.image.AxesImage at 0x7f02605fe590>
```




```
img=load_img('/content/drive/MyDrive/Anh·AI/train/yes/IMG_20220508_163408.jpg',target_size=(1
img=img_to_array(img)
img=img.reshape(1,150,150,3)
img=img.astype('float32')
img=img/255
np.argmax(model.predict(img),axis=-1)
```

```
array([1])
```