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# ✅ Example: Classify Image using VGG16

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from tensorflow.keras.preprocessing.image import load_img, img_to_array
from tensorflow.keras.applications.vgg16 import preprocess_input, decode_predictions, VGG16
from google.colab import files
import numpy as np

# Step 1: Upload image
uploaded = files.upload() # Choose your image (jpg/png)

# Step 2: Get the uploaded filename
filename = list(uploaded.keys())[0]
print("✅ Uploaded:", filename)

# Step 3: Load the image properly
image = load_img(filename, target_size=(224, 224)) # <- This line is essential

# Step 4: Convert to array and prepare for model
image = img_to_array(image)
image = np.expand_dims(image, axis=0) # shape (1, 224, 224, 3)
image = preprocess_input(image)

# Step 5: Load pretrained VGG16 model
model = VGG16(weights='imagenet')

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Step 6: Predict

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yhat = model.predict(image)
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Step 7: Decode and show top prediction

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label = decode_predictions(yhat)
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label = label[0][0]
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print(f"✅ Predicted: {label[1]} ({label[2]*100:.2f}%")
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