

```
In [1]: import numpy as np
import tensorflow as tf
from skimage.transform import resize

def load_test_data():
    data = np.load('data_train.npy') # Replace with your test data file
    labels = np.load('labels_train.npy') # Replace with your test labels file

    # Replicating the same preprocessing as in the training script
    data_reshaped = data.T.reshape((-1, 300, 300, 3))
    resized_data = np.array([resize(img, (100, 100, 3), anti_aliasing=True) for img in data_reshaped])

    if resized_data.max() > 1.0:
        data_normalized = resized_data.astype(np.float32) / 255.0
    else:
        data_normalized = resized_data

    return data_normalized, labels

def test(model, test_data, test_labels):
    loss, accuracy = model.evaluate(test_data, test_labels)
    predictions = model.predict(test_data)
    predicted_labels = np.argmax(predictions, axis=1)
    return accuracy, predicted_labels

if __name__ == "__main__":
    test_data, test_labels = load_test_data()
    model = tf.keras.models.load_model('final_model.h5')
    accuracy, predicted_labels = test(model, test_data, test_labels)

    print(f"Test Accuracy: {accuracy}")

    # Print all predicted labels side by side
    print("All Predicted Labels:")
    print(' ', ' '.join(map(str, predicted_labels)))

    # Option 2: Save the predicted labels to a file
    # np.savetxt("predicted_labels.txt", predicted_labels, fmt="%d")
```

2023-12-06 22:45:41.813226: I tensorflow/core/platform/cpu\_feature\_guard.cc:151] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: SSE4.1 SSE4.2 AVX AVX2 FMA  
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.  
2023-12-06 22:45:42.876312: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1525] Created device /job:localhost/relica:0/task:0/device:GPU:0 with 78911 MB memory: -> device: 0, name: NVIDIA A100-SXM4-80GB, pci bus id: 0000:b7:00.0, compute capability: 8.0  
2023-12-06 22:45:42.878054: I tensorflow/core/common\_runtime/gpu/gpu\_device.cc:1525] Created device /job:localhost/relica:0/task:0/device:GPU:1 with 78911 MB memory: -> device: 1, name: NVIDIA A100-SXM4-80GB, pci bus id: 0000:bd:00.0, compute capability: 8.0  
2023-12-06 22:45:45.530500: I tensorflow/stream\_executor/cuda/cuda\_dnn.cc:366] Loaded cuDNN version 8201  
50/264 [=====.....] - ETA: 0s - loss: 0.5935 - accuracy: 0.9638  
2023-12-06 22:45:47.177030: I tensorflow/stream\_executor/cuda/cuda\_blas.cc:1774] TensorFloat-32 will be used for the matrix multiplication. This will only be logged once.

Test Accuracy: 0.963164746761322

All Predicted Labels:

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