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Convert numpy arrays to tensors in TensorFlow

gcptutorials.com TensorFlow

This post explains how to convert numpy arrays, Python Lists and Python scalars to to Tensor objects in TensorFlow. TensorFlow provides `tf.convert_to_tensor` method to convert Python objects to Tensor objects.

tf.convert_to_tensor Syntax

```
tf.convert_to_tensor(
    value, dtype=None, dtype_hint=None, name=None
)
```

tf.convert_to_tensor Examples

Convert numpy arrays to Tensors using `tf.convert_to_tensor`

```
import tensorflow as tf
import numpy as np

np_array = np.array([[1, 2, 3], [4, 5, 6]])
print("numpy array")
print(np_array)


tensor_1 = tf.convert_to_tensor(np_array, dtype=tf.int32)
print("tensor from numpy array")
print(tensor_np)
```

Output

```
numpy array
[[1 2 3]
    [4 5 6]]
tensor from numpy array
tf.Tensor(
[[1 2 3]
    [4 5 6]], shape=(2, 3), dtype=int32)
```

Convert Python List to Tensor using `tf.convert_to_tensor`

```
import tensorflow as tf
import numpy as np

py_list = [1, 3, 4, 5, 6, 7]
print("python list")
print(py_list)

tensor_2 = tf.convert_to_tensor(py_list, dtype=tf.int32)
print("tensor from python list")
print(tensor_2)
```

Output

```
python list
[1, 3, 4, 5, 6, 7]
tensor from python list
tf.Tensor([1 3 4 5 6 7], shape=(6,), dtype=int32)
```

Convert Python integer to Tensor using `tf.convert_to_tensor`

```
    import tensorflow as tf
    import numpy as np

    py_scalar = 10
    print("python integer")
    print(py_scalar)

    tensor_3 = tf.convert_to_tensor(py_scalar, dtype=tf.int32)
    print("tensor from python integer")
    print(tensor_3)
```

Output

```
python integer
10
tensor from python integer
tf.Tensor(10, shape=(), dtype=int32)
```

Categories: TensorFlow

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