

tf.convert_to_tensor

```
convert_to_tensor(  
    value,  
    dtype=None,  
    name=None,  
    preferred_dtype=None  
)
```

Defined in [tensorflow/python/framework/ops.py](#).

See the guides: [Building Graphs > Utility functions](#), [Constants](#), [Sequences](#), and [Random Values](#), [Control Flow](#), [Higher Order Functions](#), [Images](#), [Inputs and Readers](#), [Math](#), [Neural Network](#), [Sparse Tensors](#), [Strings](#), [Tensor Handle Operations](#), [Tensor Transformations](#), [Variables](#), [Wraps python functions](#)

Converts the given **value** to a **Tensor**.

This function converts Python objects of various types to **Tensor** objects. It accepts **Tensor** objects, numpy arrays, Python lists, and Python scalars. For example:

```
import numpy as np  
  
def my_func(arg):  
    arg = tf.convert_to_tensor(arg, dtype=tf.float32)  
    return tf.matmul(arg, arg) + arg  
  
# The following calls are equivalent.  
value_1 = my_func(tf.constant([[1.0, 2.0], [3.0, 4.0]]))  
value_2 = my_func([[1.0, 2.0], [3.0, 4.0]])  
value_3 = my_func(np.array([[1.0, 2.0], [3.0, 4.0]], dtype=np.float32))
```

This function can be useful when composing a new operation in Python (such as **my_func** in the example above). All standard Python op constructors apply this function to each of their Tensor-valued inputs, which allows those ops to accept numpy arrays, Python lists, and scalars in addition to **Tensor** objects.

Args:

- **value**: An object whose type has a registered **Tensor** conversion function.
- **dtype**: Optional element type for the returned tensor. If missing, the type is inferred from the type of **value**.
- **name**: Optional name to use if a new **Tensor** is created.
- **preferred_dtype**: Optional element type for the returned tensor, used when dtype is None. In some cases, a caller may not have a dtype in mind when converting to a tensor, so preferred_dtype can be used as a soft preference. If the conversion to **preferred_dtype** is not possible, this argument has no effect.

Returns:

An **Output** based on **value**.

Raises:

- `TypeError` : If no conversion function is registered for `value` .
- `RuntimeError` : If a registered conversion function returns an invalid value.

Except as otherwise noted, the content of this page is licensed under the [Creative Commons Attribution 3.0 License](#), and code samples are licensed under the [Apache 2.0 License](#). For details, see our [Site Policies](#). Java is a registered trademark of Oracle and/or its affiliates.

Last updated November 2, 2017.

Stay Connected

[Blog](#)

[GitHub](#)

[Twitter](#)

Support

[Issue Tracker](#)

[Release Notes](#)

[Stack Overflow](#)

English

[Terms](#) | [Privacy](#)