

## tf.count\_nonzero

```
count_nonzero(  
    input_tensor,  
    axis=None,  
    keep_dims=False,  
    dtype=tf.int64,  
    name=None,  
    reduction_indices=None  
)
```

Defined in [tensorflow/python/ops/math\\_ops.py](#).

See the guide: [Math > Reduction](#)

Computes number of nonzero elements across dimensions of a tensor.

Reduces `input_tensor` along the dimensions given in `axis`. Unless `keep_dims` is true, the rank of the tensor is reduced by 1 for each entry in `axis`. If `keep_dims` is true, the reduced dimensions are retained with length 1.

If `axis` has no entries, all dimensions are reduced, and a tensor with a single element is returned.

**NOTE** Floating point comparison to zero is done by exact floating point equality check. Small values are **not** rounded to zero for purposes of the nonzero check.

For example:

```
x = tf.constant([[0, 1, 0], [1, 1, 0]])  
tf.count_nonzero(x) # 3  
tf.count_nonzero(x, 0) # [1, 2, 0]  
tf.count_nonzero(x, 1) # [1, 2]  
tf.count_nonzero(x, 1, keep_dims=True) # [[1], [2]]  
tf.count_nonzero(x, [0, 1]) # 3
```

### Args:

- `input_tensor`: The tensor to reduce. Should be of numeric type, or `bool`.
- `axis`: The dimensions to reduce. If `None` (the default), reduces all dimensions. Must be in the range `[-rank(input_tensor), rank(input_tensor))`.
- `keep_dims`: If true, retains reduced dimensions with length 1.
- `dtype`: The output dtype; defaults to `tf.int64`.
- `name`: A name for the operation (optional).
- `reduction_indices`: The old (deprecated) name for axis.

### Returns:

The reduced tensor (number of nonzero values).

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Last updated November 2, 2017.

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