

# tf.stack

```
tf.stack(  
    values,  
    axis=0,  
    name='stack'  
)
```



Defined in [tensorflow/python/ops/array\\_ops.py](https://www.tensorflow.org/code/stable/tensorflow/python/ops/array_ops.py)

([https://www.tensorflow.org/code/stable/tensorflow/python/ops/array\\_ops.py](https://www.tensorflow.org/code/stable/tensorflow/python/ops/array_ops.py)).

Stacks a list of rank-R tensors into one rank-(R+1) tensor.

Packs the list of tensors in `values` into a tensor with rank one higher than each tensor in `values`, by packing them along the `axis` dimension. Given a list of length `N` of tensors of shape `(A, B, C)`;

if `axis == 0` then the output tensor will have the shape `(N, A, B, C)`. if `axis == 1` then the output tensor will have the shape `(A, N, B, C)`. Etc.

For example:

```
x = tf.constant([1, 4])  
y = tf.constant([2, 5])  
z = tf.constant([3, 6])  
tf.stack([x, y, z]) # [[1, 4], [2, 5], [3, 6]] (Pack along first dim.)  
tf.stack([x, y, z], axis=1) # [[1, 2, 3], [4, 5, 6]]
```



This is the opposite of `unstack`. The numpy equivalent is

```
tf.stack([x, y, z]) = np.stack([x, y, z])
```



## Args:

- **values:** A list of Tensor objects with the same shape and type.
- **axis:** An int. The axis to stack along. Defaults to the first dimension. Negative values wrap around, so the valid range is `[-(R+1), R+1)`.
- **name:** A name for this operation (optional).

## Returns:

- **output:** A stacked Tensor with the same type as `values`.

## Raises:

- **ValueError:** If `axis` is out of the range  $[-(R+1), R+1]$ .

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*上次更新：十一月 20, 2018。*