

tf.nn.conv2d_transpose

```
conv2d_transpose(  
    value,  
    filter,  
    output_shape,  
    strides,  
    padding='SAME',  
    data_format='NHWC',  
    name=None  
)
```

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

See the guides: [Layers \(contrib\) > Higher level ops for building neural network layers](#), [Neural Network > Convolution](#)

The transpose of `conv2d`.

This operation is sometimes called "deconvolution" after [Deconvolutional Networks](#), but is actually the transpose (gradient) of `conv2d` rather than an actual deconvolution.

Args:

- `value`: A 4-D `Tensor` of type `float` and shape `[batch, height, width, in_channels]` for `NHWC` data format or `[batch, in_channels, height, width]` for `NCHW` data format.
- `filter`: A 4-D `Tensor` with the same type as `value` and shape `[height, width, output_channels, in_channels]`. `filter`'s `in_channels` dimension must match that of `value`.
- `output_shape`: A 1-D `Tensor` representing the output shape of the deconvolution op.
- `strides`: A list of ints. The stride of the sliding window for each dimension of the input tensor.
- `padding`: A string, either `'VALID'` or `'SAME'`. The padding algorithm. See the [comment here](#)
- `data_format`: A string. 'NHWC' and 'NCHW' are supported.
- `name`: Optional name for the returned tensor.

Returns:

A `Tensor` with the same type as `value`.

Raises:

- `ValueError`: If input/output depth does not match `filter`'s shape, or if padding is other than `'VALID'` or `'SAME'`.

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