

tf.nn.dropout

```
dropout(  
    x,  
    keep_prob,  
    noise_shape=None,  
    seed=None,  
    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 > Activation Functions](#)

Computes dropout.

With probability `keep_prob`, outputs the input element scaled up by `1 / keep_prob`, otherwise outputs `0`. The scaling is so that the expected sum is unchanged.

By default, each element is kept or dropped independently. If `noise_shape` is specified, it must be [broadcastable](#) to the shape of `x`, and only dimensions with `noise_shape[i] == shape(x)[i]` will make independent decisions. For example, if `shape(x) = [k, 1, m, n]` and `noise_shape = [k, 1, 1, n]`, each batch and channel component will be kept independently and each row and column will be kept or not kept together.

Args:

- `x`: A floating point tensor.
- `keep_prob`: A scalar **Tensor** with the same type as `x`. The probability that each element is kept.
- `noise_shape`: A 1-D **Tensor** of type `int32`, representing the shape for randomly generated keep/drop flags.
- `seed`: A Python integer. Used to create random seeds. See [tf.set_random_seed](#) for behavior.
- `name`: A name for this operation (optional).

Returns:

A Tensor of the same shape of `x`.

Raises:

- **ValueError**: If `keep_prob` is not in `(0, 1]` or if `x` is not a floating point tensor.

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