

# Dropout

CLASS `torch.nn.Dropout` (*p=0.5, inplace=False*) [\[SOURCE\]](#)

During training, randomly zeroes some of the elements of the input tensor with probability *p*.

The zeroed elements are chosen independently for each forward call and are sampled from a Bernoulli distribution.

Each channel will be zeroed out independently on every forward call.

This has proven to be an effective technique for regularization and preventing the co-adaptation of neurons as described in the paper [Improving neural networks by preventing co-adaptation of feature detectors](#).

Furthermore, the outputs are scaled by a factor of  $\frac{1}{1-p}$  during training. This means that during evaluation the module simply computes an identity function.

**Parameters**

- **p** (*float*) – probability of an element to be zeroed. Default: 0.5
- **inplace** (*bool*) – If set to `True`, will do this operation in-place. Default: `False`

**Shape:**

- Input: (\*). Input can be of any shape
- Output: (\*). Output is of the same shape as input

**Examples:**

```
>>> m = nn.Dropout(p=0.2)
>>> input = torch.randn(20, 16)
>>> output = m(input)
```

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