

tf.orthogonal_initializer

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Inherits From: [Initializer](#)

Aliases:

- Class `tf.initializers.orthogonal`
- Class `tf.keras.initializers.Orthogonal`
- Class `tf.orthogonal_initializer`

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

See the guide: [Variables > Sharing Variables](#)

Initializer that generates an orthogonal matrix.

If the shape of the tensor to initialize is two-dimensional, it is initialized with an orthogonal matrix obtained from the QR decomposition of a matrix of uniform random numbers. If the matrix has fewer rows than columns then the output will have orthogonal rows. Otherwise, the output will have orthogonal columns.

If the shape of the tensor to initialize is more than two-dimensional, a matrix of shape `(shape[0] * ... * shape[n - 2], shape[n - 1])` is initialized, where `n` is the length of the shape vector. The matrix is subsequently reshaped to give a tensor of the desired shape.

Args:

- `gain`: multiplicative factor to apply to the orthogonal matrix
- `dtype`: The type of the output.
- `seed`: A Python integer. Used to create random seeds. See [tf.set_random_seed](#) for behavior.

Methods

`__init__`

```
__init__(
    gain=1.0,
    seed=None,
    dtype=tf.float32
)
```

`__call__`

```
__call__(
    shape,
    dtype=None,
    partition_info=None
)
```

`from_config`

```
from_config(
    cls,
    config
)
```

Instantiates an initializer from a configuration dictionary.

Example:

```
initializer = RandomUniform(-1, 1)
config = initializer.get_config()
initializer = RandomUniform.from_config(config)
```

Args:

- `config`: A Python dictionary. It will typically be the output of `get_config`.

Returns:

An Initializer instance.

`get_config`

```
get_config()
```

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