tf.matrix_diag

Contents

Aliases:

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- `tf.linalg.diag`
- `tf.matrix_diag`

```
matrix_diag(
    diagonal,
    name=None
)
```

Defined in `tensorflow/python/ops/gen_array_ops.py`.

See the guide: Math > Matrix Math Functions

Returns a batched diagonal tensor with a given batched diagonal values.

Given a `diagonal`, this operation returns a tensor with the `diagonal` and everything else padded with zeros. The diagonal is computed as follows:

Assume `diagonal` has `k` dimensions `[I, J, K, ..., N]`, then the output is a tensor of rank `k+1` with dimensions [I, J, K, ..., N, N]` where:

`output[i, j, k, ..., m, n] = 1{m=n} * diagonal[i, j, k, ..., n]`.

For example:

```
# 'diagonal' is [[1, 2, 3, 4], [5, 6, 7, 8]]

and diagonal.shape = (2, 4)

tf.matrix_diag(diagonal) ==> [[[1, 0, 0, 0]
                                [0, 2, 0, 0]
                                [0, 0, 3, 0]
                                [0, 0, 0, 4]],
                               [[5, 0, 0, 0]
                                [0, 6, 0, 0]
                                [0, 0, 7, 0]
                                [0, 0, 0, 8]]]

which has shape (2, 4, 4)
```

Args:

- `diagonal`: A `Tensor`. Rank `k`, where `k >= 1`.
- `name`: A name for the operation (optional).

Returns:

A `Tensor`. Has the same type as `diagonal`. Rank `k+1`, with `output.shape = diagonal.shape + [diagonal.shape[-1]]`.

Last updated November 2, 2017.