

tf.matrix_diag_part

Contents

Aliases:

Aliases:

- `tf.linalg.diag_part`
- `tf.matrix_diag_part`

```
matrix_diag_part(  
    input,  
    name=None  
)
```

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

See the guide: [Math > Matrix Math Functions](#)

Returns the batched diagonal part of a batched tensor.

This operation returns a tensor with the **diagonal** part of the batched **input**. The **diagonal** part is computed as follows:

Assume **input** has **k** dimensions `[I, J, K, ..., M, N]`, then the output is a tensor of rank **k - 1** with dimensions `[I, J, K, ..., min(M, N)]` where:

$$\text{diagonal}[i, j, k, \dots, n] = \text{input}[i, j, k, \dots, n, n].$$

The input must be at least a matrix.

For example:

```
# 'input' is [[[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]]]  
  
and input.shape = (2, 4, 4)  
  
tf.matrix_diag_part(input) ==> [[1, 2, 3, 4], [5, 6, 7, 8]]  
  
which has shape (2, 4)
```

Args:

- **input**: A **Tensor**. Rank **k** tensor where **k** ≥ 2 .
- **name**: A name for the operation (optional).

Returns:

A `Tensor`. Has the same type as `input`. The extracted diagonal(s) having shape `diagonal.shape = input.shape[:-2] + [min(input.shape[-2:])]`.

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