

tf.linalg.slogdet

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

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

Computes the sign and the log of the absolute value of the determinant of one or more square matrices.

The input is a tensor of shape `[N, M, M]` whose inner-most 2 dimensions form square matrices. The outputs are two tensors containing the signs and absolute values of the log determinants for all N input submatrices `[..., :, :]` such that the determinant = $\text{sign} \exp(\text{log_abs_determinant})$. The `log_abs_determinant` is computed as $\det(P) \sum(\log(\text{diag}(LU)))$ where LU is the LU decomposition of the input and P is the corresponding permutation matrix.

Args:

- `input`: A **Tensor**. Must be one of the following types: `float32`, `float64`, `complex64`, `complex128`. Shape is `[N, M, M]`.
- `name`: A name for the operation (optional).

Returns:

A tuple of **Tensor** objects (sign, log_abs_determinant).

- `sign`: A **Tensor**. Has the same type as `input`. The signs of the log determinants of the inputs. Shape is `[N]`.
- `log_abs_determinant`: A **Tensor**. Has the same type as `input`. The logs of the absolute values of the determinants of the N input matrices. Shape is `[N]`.

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