# tf.matrix_inverse

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Aliases:

## Aliases:

- `tf.linalg.inv`
- `tf.matrix_inverse`

```
matrix_inverse(
    input,
    adjoint=False,
    name=None
)
```

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

See the guide: Math > Matrix Math Functions

Computes the inverse of one or more square invertible matrices or their

adjoints (conjugate transposes).

The input is a tensor of shape `[..., M, M]` whose inner-most 2 dimensions form square matrices. The output is a tensor of the same shape as the input containing the inverse for all input submatrices `[..., :, :]`.

The op uses LU decomposition with partial pivoting to compute the inverses.

If a matrix is not invertible there is no guarantee what the op does. It may detect the condition and raise an exception or it may simply return a garbage result.

## Args:

- `input`: A `Tensor`. Must be one of the following types: `float64`, `float32`, `complex64`, `complex128`. Shape is `[..., M, M]`.
- `adjoint`: An optional `bool`. Defaults to `False`.
- `name`: A name for the operation (optional).

## Returns:

A `Tensor`. Has the same type as `input`. Shape is `[..., M, M]`.

## numpy compatibility

Equivalent to np.linalg.inv

*Last updated November 2, 2017.*