# tf.contrib.kfac.fisher_factors.ConvOutputKroneckerFactor

## Class **ConvOutputKroneckerFactor**

Inherits From: **InverseProvidingFactor**

Defined in **tensorflow/contrib/kfac/python/ops/fisher_factors.py** .

Kronecker factor for the output side of a convolutional layer.

## Methods

### __init__

```
__init__(outputs_grads)
```

### get_cov

```
get_cov()
```

### get_eigendecomp

```
get_eigendecomp()
```

### get_inverse

```
get_inverse(damping)
```

### get_matpower

```
get_matpower(
    exp,
    damping
)
```

### instantiate_covariance

```
instantiate_covariance()
```

Instantiates the covariance Variable as the instance member _cov.

## make_covariance_update_op

```
make_covariance_update_op(ema_decay)
```

Constructs and returns the covariance update Op.

Args:

- `ema_decay` : The exponential moving average decay (float or Tensor).

Returns:

An Op for updating the covariance Variable referenced by _cov.

## make_inverse_update_ops

```
make_inverse_update_ops()
```

Create and return update ops corresponding to registered computations.

## register_damped_inverse

```
register_damped_inverse(damping)
```

Registers a damped inverse needed by a FisherBlock.

Args:

- `damping` : The damping value (float or Tensor) for this factor.

## register_eigendecomp

```
register_eigendecomp()
```

Registers that an eigendecomposition is needed by a FisherBlock.

## register_matpower

```
register_matpower(
    exp,
    damping
)
```

Registers a matrix power needed by a FisherBlock.

Args:

- `exp` : The exponent (float or Tensor) to raise the matrix to.
- `damping` : The damping value (float or Tensor).

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*Last updated November 2, 2017.*

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