

# tf.contrib.kfac.loss\_functions.NormalMeanNegativeLogProbLoss

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## Class `NormalMeanNegativeLogProbLoss`

Inherits From: `DistributionNegativeLogProbLoss`, `NaturalParamsNegativeLogProbLoss`

Defined in `tensorflow/contrib/kfac/python/ops/loss_functions.py`.

Neg log prob loss for a normal distribution parameterized by a mean vector.

Note that the covariance is treated as a constant 'var' times the identity. Also note that the Fisher for such a normal distribution with respect the mean parameter is given by:

$$F = (1/\text{var}) * I$$

See for example [https://www.ii.pwr.edu.pl/~tomczak/PDF/\[JMT\]Fisher\\_inf.pdf](https://www.ii.pwr.edu.pl/~tomczak/PDF/[JMT]Fisher_inf.pdf).

## Properties

**`fisher_factor_inner_shape`**

**`fisher_factor_inner_static_shape`**

**`hessian_factor_inner_shape`**

**`hessian_factor_inner_static_shape`**

**`inputs`**

**`params`**

## Methods

**`__init__`**

```
__init__(  
    mean,  
    var=0.5,  
    targets=None,  
    seed=None  
)
```

## evaluate

```
evaluate()
```

Evaluate the loss function.

## evaluate\_on\_sample

```
evaluate_on_sample(seed=None)
```

## multiply\_fisher

```
multiply_fisher(vector)
```

## multiply\_fisher\_factor

```
multiply_fisher_factor(vector)
```

## multiply\_fisher\_factor\_replicated\_one\_hot

```
multiply_fisher_factor_replicated_one_hot(index)
```

## multiply\_fisher\_factor\_transpose

```
multiply_fisher_factor_transpose(vector)
```

## multiply\_hessian

```
multiply_hessian(vector)
```

## multiply\_hessian\_factor

```
multiply_hessian_factor(vector)
```

## multiply\_hessian\_factor\_replicated\_one\_hot

```
multiply_hessian_factor_replicated_one_hot(index)
```

## multiply\_hessian\_factor\_transpose

```
multiply_hessian_factor_transpose(vector)
```

## sample

```
sample(seed)
```

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