

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

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## Class `MultiBernoulliNegativeLogProbLoss`

Inherits From: `DistributionNegativeLogProbLoss`, `NaturalParamsNegativeLogProbLoss`

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

Neg log prob loss for multiple Bernoulli distributions param'd by logits.

Represents N independent Bernoulli distributions where  $N = \text{len}(\text{logits})$ . Its Fisher Information matrix is given by,

$F = \text{diag}(p * (1-p))$   $p = \text{sigmoid}(\text{logits})$

As F is diagonal with positive entries, its factor B is,

$B = \text{diag}(\text{sqrt}(p * (1-p)))$

## Properties

**`fisher_factor_inner_shape`**

**`fisher_factor_inner_static_shape`**

**`hessian_factor_inner_shape`**

**`hessian_factor_inner_static_shape`**

**`inputs`**

**`params`**

## Methods

**`__init__`**

```
__init__(  
    logits,  
    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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