tf.contrib.kfac.loss_functions.NormalMeanVarianceNegativeLogProbLoss

Contents
Class NormalMeanVarianceNegativeLogProbLoss
Properties
   fisher_factor_inner_shape
   fisher_factor_inner_static_shape

Class **NormalMeanVarianceNegativeLogProbLoss**

Inherits From: `DistributionNegativeLogProbLoss`

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

Negative log prob loss for a normal distribution with mean and variance.

This class parameterizes a multivariate normal distribution with n independent dimensions. Unlike `NormalMeanNegativeLogProbLoss` , this class does not assume the variance is held constant. The Fisher Information for for n = 1 is given by,

F = [[1 / variance, 0], [0, 0.5 / variance^2]]

where the parameters of the distribution are concatenated into a single vector as [mean, variance]. For n > 1, the mean parameter vector is concatenated with the variance parameter vector.

See https://www.ii.pwr.edu.pl/~tomczak/PDF/[JMT]Fisher_inf.pdf for derivation.

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,
    variance,
    targets=None,
    seed=None
)
```

evaluate

```
evaluate()
```

Evaluate the loss function.

evaluate_on_sample

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

multiply_fisher

```
multiply_fisher(vecs)
```

multiply_fisher_factor

```
multiply_fisher_factor(vecs)
```

multiply_fisher_factor_replicated_one_hot

```
multiply_fisher_factor_replicated_one_hot(index)
```

multiply_fisher_factor_transpose

```
multiply_fisher_factor_transpose(vecs)
```

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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