

tf.contrib.kfac.loss_functions.CategoricalLogitsNegativeLogProbLoss

Contents

Class `CategoricalLogitsNegativeLogProbLoss`

Properties

`fisher_factor_inner_shape`

`fisher_factor_inner_static_shape`

Class `CategoricalLogitsNegativeLogProbLoss`

Inherits From: `DistributionNegativeLogProbLoss`, `NaturalParamsNegativeLogProbLoss`

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

Neg log prob loss for a categorical distribution parameterized by logits.

Note that the Fisher (for a single case) of a categorical distribution, with respect to the natural parameters (i.e. the logits), is given by:

$$F = \text{diag}(p) - p \cdot p^T$$

where $p = \text{softmax}(\text{logits})$. F can be factorized as $F = B \cdot B^T$ where

$$B = \text{diag}(q) - p \cdot q^T$$

where q is the entry-wise square root of p . This is easy to verify using the fact that $q^T \cdot q = 1$.

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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